WE CLAIM:

1. An emergency power system comprising:

a plurality of solid propellant gas generators each having a gas outlet in fluid communication with a turbine wheel rotationally disposed within a gas turbine housing; and

said turbine wheel being in rotational communication with an electric generator input shaft or with a fluid pump input shaft.

2. The emergency power system of Claim 1, wherein said turbine wheel is in rotational communication with both said electric generator input shaft and with said fluid pump input shaft.

3. The emergency power system of Claim 1, wherein each of said plurality of solid propellant gas generators are individually actuatable to provide a gaseous output capable of causing rotation of said turbine wheel.

4. The emergency power system of Claim 1, wherein each of said plurality of solid propellant gas generators are simultaneously actuatable to provide a gaseous output capable of causing rotation of said turbine wheel.

5. The emergency power system of Claim 1, comprising three or more of said solid propellant gas generators.

6. The emergency power system of Claim 1, comprising five or more of said solid propellant gas generators.

7. The emergency power system of Claim 1, further comprising a flow restriction orifice disposed between, and in fluid communication with, said gas outlet and said turbine wheel.

8. The emergency power system of Claim 7, wherein said flow restriction orifice has a fixed area.

9. The emergency power system of Claim 7, wherein said flow restriction orifice has a variable area.

10. An emergency power system comprising:

a plurality of solid propellant gas generators, each of said solid propellant gas generators having a gas outlet in fluid communication with a first conduit;

said first conduit in fluid communication with a second conduit through a fixed area flow restriction orifice;

said first conduit in fluid communication with a third conduit;

said third conduit in fluid communication with a flow control valve inlet of a flow control valve;

said flow control valve having a first control valve position wherein said flow control valve inlet is in fluid communication with said second conduit through said flow control valve;

said flow control valve further having a second control valve position wherein said flow control valve inlet is closed;

said flow control valve further having a third control valve position wherein said flow control valve inlet is in fluid communication with an external environment;

said second conduit in fluid communication with a turbine inlet of a gas turbine housing;

each of said solid propellant gas generators being individually actuatable to provide a gaseous output capable of rotating a turbine wheel rotationally disposed within said gas turbine housing; and

said turbine wheel being in rotational communication with an electric generator input shaft, a fluid pump input shaft, or with both said electric generator input shaft and said fluid pump input shaft.

11. The emergency power system of Claim 10, further comprising a system controller capable of controlling said flow control valve position based on a rotational speed of said turbine wheel.

12. The emergency power system of Claim 10, further comprising one or more pressure transducers disposed in fluid communication with said gaseous output of said solid propellant gas generators, each of said pressure transducers being capable of providing a pressure output signal.

13. The emergency power system of Claim 12, further comprising a system controller capable of controlling said flow control valve based at least in part on said pressure output signal of at least one of said one or more pressure transducers.

14. The emergency power system of Claim 10, further comprising one or more temperature sensors disposed in thermal communication with said gaseous output of said solid propellant gas generators, each of said temperature sensors capable of providing a temperature output signal.

15. The emergency power system of Claim 14, further comprising a system controller capable of controlling said flow control valve based on a temperature output signal of at least one of said one or more temperature sensors.

16. An emergency power system comprising:

a plurality of solid propellant gas generators each having a gas outlet in fluid communication with a turbine wheel rotationally disposed within a gas turbine housing;

a fixed area flow restriction orifice disposed between, and in fluid communication with, said gas outlet and said turbine wheel;

a vent valve in fluid communication with said gas outlet, said vent valve capable of providing fluid communication between said gas outlet and an external environment;

each of said solid propellant gas generators being individually actuatable to provide a gaseous output capable of rotating said turbine wheel rotationally disposed within said gas turbine housing; and

said turbine wheel being in rotational communication with an electric generator input shaft, a fluid pump input shaft, or a combination of said electric generator input shaft and said fluid pump input shaft.

17. The emergency power system of Claim 16, further comprising a system controller capable of controlling said vent valve position based on a rotational speed of said turbine wheel.

18. The emergency power system of Claim 16, further comprising a compressed gas assist valve having a compressed gas assist valve inlet in fluid communication with a compressed gas tank, wherein said compressed gas assist valve is capable of providing fluid communication between a compressed gas disposed within said compressed gas tank and said turbine wheel through said compressed gas assist valve inlet.

19. The emergency power system of Claim 18, further comprising a system controller capable of controlling said compressed gas assist valve based on a rotational speed of said turbine wheel.

20. The emergency power system of Claim 16, further comprising a dump valve capable of providing fluid communication between said gas outlet and said external environment, while said dump valve is further capable of simultaneously preventing fluid communication between said turbine wheel and said gas outlet.

21. The emergency power system of Claim 20, further comprising a system controller capable of controlling said dump valve position based on a rotational speed of said turbine wheel.

22. An emergency power system comprising:

a plurality of solid propellant gas generators each having a gas outlet in fluid communication with a turbine wheel rotationally disposed within a gas turbine housing;

a fixed area flow restriction orifice disposed between, and in fluid communication with, said gas outlet and said turbine wheel;

each of said solid propellant gas generators being individually actuatable to provide a gaseous output capable of turning said turbine wheel;

each of said solid propellant gas generators being capable of providing a gaseous output having a temperature at said turbine wheel of about 1800°F or less; and

said turbine wheel being in rotational communication with an electric generator input shaft, a fluid pump input shaft, or a combination of said electric generator input shaft and said fluid pump input shaft.

23. The emergency power system of Claim 22, wherein said temperature of said gaseous output at said turbine wheel is about 1500°F or less.

24. The emergency power system of Claim 22, wherein said temperature of said gaseous output at said turbine wheel is about 1300°F or less.

25. The emergency power system of Claim 22, wherein each of said solid propellant gas generators comprises a solid propellant in an amount capable of providing said gaseous output in an amount to produce a pressure of gaseous output at said turbine wheel of about 200 psi to about 1000 psi for a period of at least about 5 minutes.

26. The emergency power system of Claim 21, wherein each of said solid propellant gas generators comprises a solid propellant in an amount capable of providing said gaseous output in an amount to produce a pressure of gaseous output at said turbine wheel of about 200 psi to about 1000 psi for a period of at least about 10 minutes.

27. An aircraft comprising an emergency power system, wherein said emergency power system comprises:

a plurality of solid propellant gas generators each having a gas outlet in fluid communication with a turbine wheel rotationally disposed within a gas turbine housing; and

said turbine wheel being in rotational communication with an electric generator input shaft, a fluid pump input shaft, or a combination of said electric generator input shaft and said fluid pump input shaft.

28. The aircraft of Claim 27, wherein said emergency power system further comprises:

a fixed area flow restriction orifice disposed between, and in fluid communication with, said gas outlet and said turbine wheel;

a vent valve in fluid communication with said gas outlet, said vent valve capable of providing fluid communication between said gas outlet and an external environment; and

a system controller capable of controlling said vent valve based on a rotational speed of said turbine wheel, wherein each of said solid propellant gas generators is individually actuatable to provide a gaseous output capable of turning said turbine wheel.

29. An emergency power system comprising:

a plurality of solid propellant gas generators each having a gas outlet in fluid communication with a turbine wheel rotationally disposed within a gas turbine housing;

a fixed area flow restriction orifice disposed between, and in fluid communication with, said gas outlet and said turbine wheel;

a vent valve in fluid communication with said gas outlet, said vent valve capable of providing fluid communication between said gas outlet and an external environment;

a compressed gas assist valve having a compressed gas assist valve inlet in fluid communication with a compressed gas tank, wherein said compressed gas assist valve is capable of providing fluid communication between a compressed gas disposed within said compressed gas tank and said turbine wheel through said compressed gas assist valve inlet;

a dump valve capable of providing fluid communication between said gas outlet and said external environment, while said dump valve is further capable of simultaneously preventing fluid communication between said turbine wheel and said gas outlet;

a system controller capable of controlling said vent valve, said compressed gas assist valve, and said dump valve based on a rotational speed of said turbine wheel;

wherein each of said solid propellant gas generators is individually actuatable to provide a gaseous output capable of turning said turbine wheel;

wherein each of said solid propellant gas generators is capable of providing said gaseous output having a temperature at said turbine wheel of about 1800°F or less;

wherein each of said solid propellant gas generators comprises a solid propellant in an amount capable of providing said gaseous output in an amount to produce a pressure of gaseous output at said turbine wheel of about 200 psi to about 1000 psi for a period of at least about 5 minutes; and

said turbine wheel being in rotational communication with an electric generator input shaft, a fluid pump input shaft, or a combination thereof.

30. A method of providing emergency power, the method comprising the steps of actuating at least one of a plurality of solid propellant gas generators of an emergency power system; and

producing emergency power therefrom, wherein the emergency power system comprises:

said plurality of solid propellant gas generators each having a gas outlet in fluid communication with a turbine wheel rotationally disposed within a gas turbine housing; and

said turbine wheel being in rotational communication with an electric generator input shaft, a fluid pump input shaft, or both of said generator input shaft and said fluid pump input shaft.

31. A method of providing emergency power, the method comprising:

actuating a plurality of solid propellant gas generators of an emergency power system simultaneously with each other to produce a gas;

delivering said gas to a turbine wheel rotationally disposed with a gas turbine housing to produce rotation of said turbine wheel;

coupling an output shaft of said turbine wheel to an input shaft of an electric generator, to an input shaft of a fluid pump, or to both an input shaft of an electric generator and input shaft of a fluid pump; and

producing emergency power from said electric generator, producing emergency power from said fluid pump, or producing emergency power from both said electric generator and from said fluid pump, wherein said emergency power system comprises:

said plurality of solid propellant gas generators, each of said solid propellant gas generators having a gas outlet in fluid communication with a first conduit;

said first conduit in fluid communication with a second conduit through a fixed area flow restriction orifice;

said first conduit in fluid communication with a third conduit;

said third conduit in fluid communication with a flow control valve inlet of a flow control valve;

said flow control valve having a first control valve position wherein said flow control valve inlet is in fluid communication with said second conduit through said flow control valve;

said flow control valve further having a second control valve position wherein said flow control valve inlet is closed;

said flow control valve further having a third control valve position wherein said flow control valve inlet is in fluid communication with an external environment; and

said second conduit in fluid communication with a turbine inlet of said gas turbine housing.

32. A method of Claim 31, further comprising controlling a flow of said gas using said fixed area flow restriction orifice and said vent valve, wherein said emergency power system further comprises a system controller in communication with said vent valve, wherein said system controller is responsive to a rotational speed of said turbine wheel.